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Chapter

Introductory Chapter: An Overview of the Autopsy Procedure

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1. Introduction

Forensic medicine is a branch of medicine that applies the principles and knowledge of the medical sciences to problems in the field of law [1]. It is the application of medical knowledge for the scientific investigation of facts and causal relationships, as well as the analysis and interpretation thereof in the service of the law in its broadest sense; moreover, it addresses all legal aspects of the practice of medicine during teaching, medical training, and specialist training. From a historical perspective, “forensic” or “medicolegal” medicine has grown as a scientific medical specialty primarily to assist police and legal authorities by providing expert appraisals in the fact-finding and adjudication process. The investigative and appraisal activities inherent to forensic medicine are required far beyond the purposes of criminal prosecution and thus make an important contribution in terms of legal certainty and a functioning rule of law. Forensic medicine is traditionally concerned foremost with the investigation of sudden and unexpected deaths. The focus here is on determining the mode of death on the basis of the established cause of death. In this context and besides unnatural deaths apparent at first glance, sudden natural deaths as well as a large group of unexplained deaths need to be considered [2].

The major duties of a medicolegal system in handling deaths falling under its jurisdiction are to determine the cause and manner of death, identify the deceased if unknown, determine the time of death and injury, collect evidence from the body that can be used to prove or disprove an individual’s guilt or innocence, and confirm or deny the account of how the death occurred, document injuries, or lack of them, deduce how the injuries occurred, document any natural disease present, determine or exclude other contributory or causative factors to the death, and provide expert testimony if the case goes to trial [1].

2. The cause of death and the manner of death

The cause of death is the disease or injury, which sets in motion the physiologic train of events culminating in cerebral and cardiac electrical silence. The manner of death is a pseudojudicial classification of deaths dating back to Norman England, when the property of suicide victims was seized by the Crown. The four manners of death are natural, accident, suicide, and homicide [3]. The forensic determination of cause of death in natural deaths relates primarily to deaths involving, for example, suspicious circumstances in which a body is found or any other circumstances that may require the authorities to determine the cause of death. In such cases, the spectrum of diseases
causally linked to (sudden) death is broad: myocardial infarct, myocarditis, coronary atherosclerosis with acute heart failure, ruptured aneurysm, pneumonia, meningitis, etc. Death is also often caused by relatively rare diseases, which, due to acute death and failure of the patient to seek medical advice, remained undiagnosed during the individual’s lifetime [2]. In many cases, the cause and manner of death may be obvious. It is the documentation of the injuries or lack of them, as well as the interpretation of how they occurred and the determination or exclusion of other contributory or causative factors that are important [1].

3. The difference between forensic autopsy and medical autopsy

Autopsies have served numerous purposes for decades, including: determining underlying disease and cause of death in the individual case, expanding scientific knowledge (e.g., metastatic behavior of malignancies), assessing disease response to therapy, comparing autopsy findings with diagnostic findings, gaining insight into the evolution of new diseases (HIV infection, AIDS, SIRS, etc.), revealing and explaining hitherto unknown aspects of forensic criminological and insurance medicine, and in the education, training, and further training of medical students, medical assistants, and physicians in specialist medical training or other forms of further training [2]. An autopsy represents a postmortem surgical examination of a human body, but not all autopsies are equivalent. There are two basic types of autopsies: forensic or medicolegal autopsies and hospital or medical autopsies [4].

The forensic autopsy differs from the hospital or medical autopsy in its objectives and relevance. Besides determining the cause of death, the forensic pathologist must establish the manner of death (natural, accidental, suicidal, or homicidal), the identity of the deceased if unknown, and the time of death or injury. The forensic autopsy may also involve collection of evidence from the body, which can subsequently be used to either prove or disprove an individual’s guilt, and confirm or deny his account of how the death occurred [1].

4. What should be considered when performing a forensic autopsy?

In the broadest sense, a forensic or medicolegal autopsy is any autopsy that generates an evidentiary document that forms a basis for opinions rendered in a criminal trial, deposition, wrongful death civil suit, medical malpractice civil suit, administrative hearing, or workmen's compensation hearing [3]. The forensic autopsy involves not only the actual examination of the body at the autopsy table, but the consideration of other aspects that the general pathologist does not believe to be part of the autopsy—the scene, clothing, and toxicology. The forensic autopsy begins at the scene. Pathologists should not perform a forensic autopsy unless they know the circumstances leading up to and surrounding the death. This is a very basic principle that is often violated [1]. Not examining a body at the scene has been considered a potential pitfall for the pathologist in a medicolegal death investigation. Scene visitation is not always necessary or possible for a pathologist conflicted by other duties. Death scene and witness information from different investigators (coroner, medical examiner or investigator, police, fire marshal, etc.) can be communicated to the pathologist by various means (diagrams, photographs, video, and digital images) prior to the autopsy [5].
What would one think of a physician who examined a patient without asking what the patient’s symptoms or complaints were? As in all examinations of patients, one must have a medical history. In the case of the forensic pathologist, the “patient” is unable to render this history. Therefore, the history must be obtained by other investigators. This history should be known before the autopsy begins. The scene should be documented either with diagrams or photographs, preferably both. People should be interviewed, and a written report should be given to the pathologist prior to the autopsy. The body should be touched and moved as little as possible at the scene. In cases of violent death, paper bags should be secured about the victim’s hands so that no trace evidence will be lost. Prior to transportation, the body should be either wrapped in a clean white sheet or placed in a clean body bag. Examination of the clothing is as much a part of the autopsy as examination of the wounds. The clothing must be examined for blood stains and trace evidence as well as to see if the wounds in the body correlate with the defects in the clothing [1].

5. Conclusions

Many medicolegal death investigations rely on information derived from autopsies. The success of an autopsy in answering questions (e.g., identification, injury causation) depends on a systematic approach by the pathologist. The “complete autopsy” is a series of necessary steps taken by the pathologist, who receives background information about the deceased, performs an external examination and internal dissection, and collects appropriate bodily samples for supplementary testing. The care exercised by the pathologist in this process is reflected in an accurate autopsy report, which addresses the most important question—the cause of death. The pathologist must be aware of potential pitfalls at every step of the postmortem investigation, any of which can pose a risk to the final resolution of a medicolegal investigation [5].

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References


